SUPERO®

SuperRack™

USER'S MANUAL

Revision 1.0

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperRack™ system. Setup, installation and maintainance should be performed by experienced technicians only.

The SuperRack system is a high-end rack mount system that includes parts for making different rack systems based upon any one of five standard models of the SuperRack.

Manual Organization

Chapter 1: Introduction

The first chapter provides a overview of the SuperRack system and its various models and components.

Chapter 2: SuperRack System Installation

This chapter describes the steps necessary to install the SuperRack system on site and how to unship the SuperRack from its crate.

Chapter 3: Safety

You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed when installing and servicing the SuperRack.

Chapter 4: SuperRack Standard Models

This chapter provides detailed information about the features and elements of the SuperRack system's standard models.

Appendix A: SuperRack System Specifications

This appendix contains specifications for the standard models of the SuperRack system.

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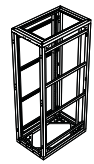
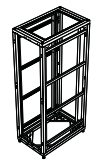
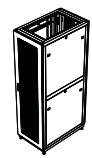
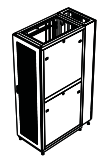
Appendix A SuperRack System Parts List

Chapter 1

Introduction

1-1 Overview

The SuperRack system consists of five standard models of racks that are assembled from the same pool of components and accessories. The below table lists the available standard rack models in the SuperRack system and their described uses.

Picture	Rack Model	Description
	SBK-42BF-01	42U Basic Frame system
	SRK-42OR-01	42U Open Frame system
	SRK-420R-02	42U Open Frame with Rear Expansion system
	SRK-42SE-01	42U Enclosure system
	SRK-42SE-02	42U Enclosure with Rear Expansion system

For details on these models see Chapter 4. Additional components or accessories can be added or subtracted from these standard models by the user.

1-2 SuperRack Features

The SuperRack system offers the following features:

- Supports quick release square mounting holes with adapters for round screw mounts
- User conventional cabling and cabling identification designs
- Front, rear and side expansion units provide modular solutions for any system configuration
- Static load rating of 5511.55lbs (2500kg) to support high density rack components
- EIA standard 310D hardware
- Sturdy fully welded construction
- Wide range of flexible accessory options

1-3 Returning Merchandise for Service

A receipt or copy of your invoice marked with the date of purchase is required before any warranty service will be rendered. You can obtain service by calling your vendor for a Returned Merchandise Authorization (RMA) number. When returning to the manufacturer, the RMA number should be prominently displayed on the outside of the shipping carton, and mailed prepaid or hand-carried. Shipping and handling charges will be applied for all orders that must be mailed when service is complete.

For faster service, RMA authorizations may be requested online at:

http://www. supermicro.com/support/rma/

Whenever possible, repack the chassis in the original Supermicro carton, using the original packaging material. If these are no longer available, be sure to pack the chassis securely, using packaging material to surround the chassis so that it does not shift within the carton and become damaged during shipping.

This warranty only covers normal consumer use and does not cover damages incurred in shipping or from failure due to the alteration, misuse, abuse or improper maintenance of products. During the warranty period, contact your distributor first for any product problems. The Supermicro warranty can be found on our website at:

http://www.supermicro.com/support/Warranty/

1-4 Contacting Supermicro

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Technical Support:	
Email:	support@supermicro.com.tw
Tel:	+886-(2) 8226-5990

Notes

Chapter 2

System Safety

Warnings and Precautions!

2-1 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SuperRack system from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as a server system. When disconnecting power, you should first power down the operating system first and then unplug the power cords.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease static electrical discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cords must include a grounding plug and must be plugged into grounded electrical outlets.

- This product may be connected to an power system. In all cases, make sure that the unit is also reliably connected to Earth (ground).

2-2 General Safety Precautions

Follow these rules to ensure general safety:

- Keep the area around the SuperRack system clean and free of clutter.
- The SuperRack system weighs up to 258.91 lbs (117.44 kg) empty, and has a shipping weight of up to 331.08 lbs (150.18 kg). The system should be moved on its casters.
- Place any system components and accessories that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it after ensuring that all connections have been made.

2-3 ESD Precautions

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing the board from the antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

2-4 Rack Precautions

Warning: To reduce the risk of personal injury or damage to the equipment, do not attempt to move large equipment racks alone. Obtain adequate assistance to stabilize the rack during movement or hire professional equipment riggers to move it.

Make sure to follow the below rack precautions:

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them when the SuperRack is setup in its location.

  Caution: To reduce the risk of damage to the casters make sure that the full weight of the rack rests on the leveling feet, and not on the casters. The casters are designed only as an aid in moving the rack into position and are not designed to support the weight of the rack, and may become damaged if relied upon to support the rack.

- In single rack installation, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.

- Always make sure the rack is stable before extending a component from the rack.

- You should extend only one component at a time – extending two or more simultaneously may cause the rack to become unstable.

Chapter 3

Rack Setup and Installation

3-1 Overview

This chapter provides information on setting up and installing your SuperRack system. It is assumed in this chapter that your SuperRack system is shipped assembled and ready for installation on site. .

3-2 Inspecting the Rack and Shipping Crate

You should inspect the crate the SuperRack system was shipped in and note if it was damaged in any way. After unshipping the SuperRack from the crate inspect the SuperRack itself for any damage. If the rack itself shows damage you should file a damage claim with the carrier who delivered it.

3-3 Preparing for Setup

Before setting up your SuperRack system, please review the following setup information and considerations for the location where the SuperRack system will be installed.

Location Setup Recommendations

Below are recommended requirements for the setup location:

- Location should have reliable local power and the utility should have the availability to provide two alternate electrical feeds preferably from separate sources
- Have a minimum of two routes for data and phone infrastructure into the building
- Minimum one hour fire rated walls
- Minimum 100+ PSF floor loading, or 200+ PSF floor loading to be determined by equipment load
- Nine (9) feet raised floor to ceiling clear height minimum

- No exterior windows
- No overhead water pipes
- Power and Data cabling shall be in separate raceways overhead.

Rack Precautions

Equipment should be mounted into a rack so that a hazardous conditions do not arise due to uneven mechanical loading.

Observe the following rack precautions

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25-inches).
- Allow approximately 30-inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.
- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor, with the full weight of the rack resting upon them.
- In single rack installation, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a component from the rack.
- You should extend only one component at a time – extending two or more simultaneously may cause the rack to become unstable.

Server or Component Precautions

Below are server and component precautions to observe for all components installed in the SuperRack system:

- Review the electrical and general safety precautions in Chapter 2.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work up.

- Use a regulating uninterruptible power supply (UPS) to protect the rack's servers from power surges, voltage spikes and to keep your system operating in case of a power failure.

- Allow any hot plug drives and power supply modules to cool before touching them.

- Always keep the rack's front door (if installed) and all panels and components on the servers closed when not servicing to maintain proper cooling.

3-4 Unpacking the SuperRack from its Shipping Carton

Use the procedure below to help you unpack the SuperRack system from its shipping carton. The SuperRack comes mounted on a pallet with steel retaining brackets, packaged in a cardboard shipping carton. It is reinforced with plastic strapping, and with both an interior plastic bag and exterior plastic covering that is secured by tape to protect it from damage.

Note: The drawing for this section are for illustration purposes only. They do not necessarily reflect the exact product(s) described in this manual.

Unpacking the SuperRack Shipping Carton

1. Inspect the shipping carton for damage. If you see any damage, contact your shipping company.

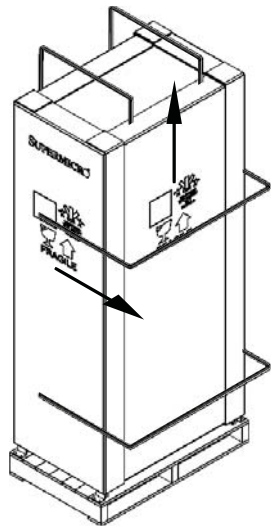
   Note: Make sure the crate is upright with the label arrow pointing upward.

2. Move the shipping carton to the SuperRack's deployment location.

   Note: It is recommended that you use a lift or forklift for moving the SuperRack to its final location.

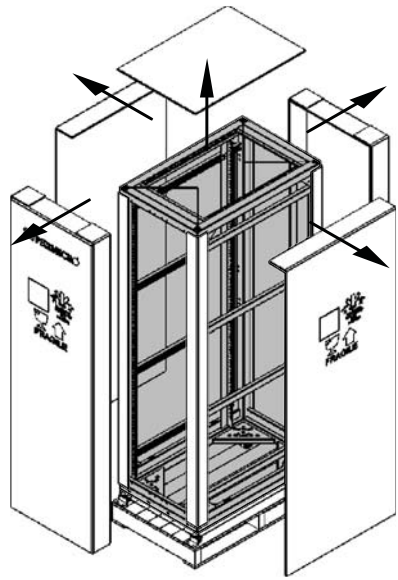
3. Remove the outer plastic wrapping from the carton, then cut and remove the retaining straps from the outside of the shipping carton (see Figure 3-1).

Figure 3-1. Remove Retaining Straps



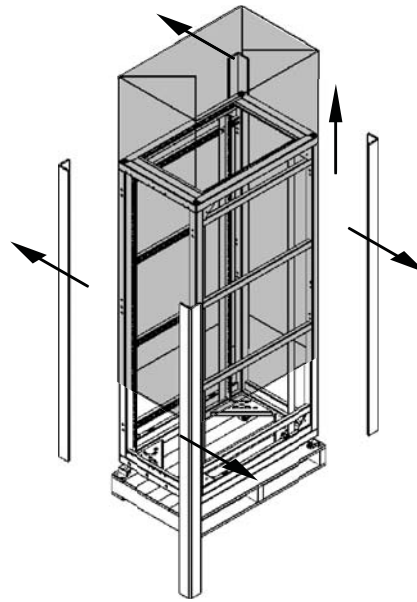
4. Remove the sides from the shipping carton (see Figure 3-2).

Figure 3-2. Remove Shipping Carton Sides



5. Cut the retaining tape from the carton and the interior plastic covering and remove the remaining corners of the shipping carton from the outside of the SuperRack (see Figure 3-3).

Figure 3-3. Remove Plastic Covering and Carton Corners



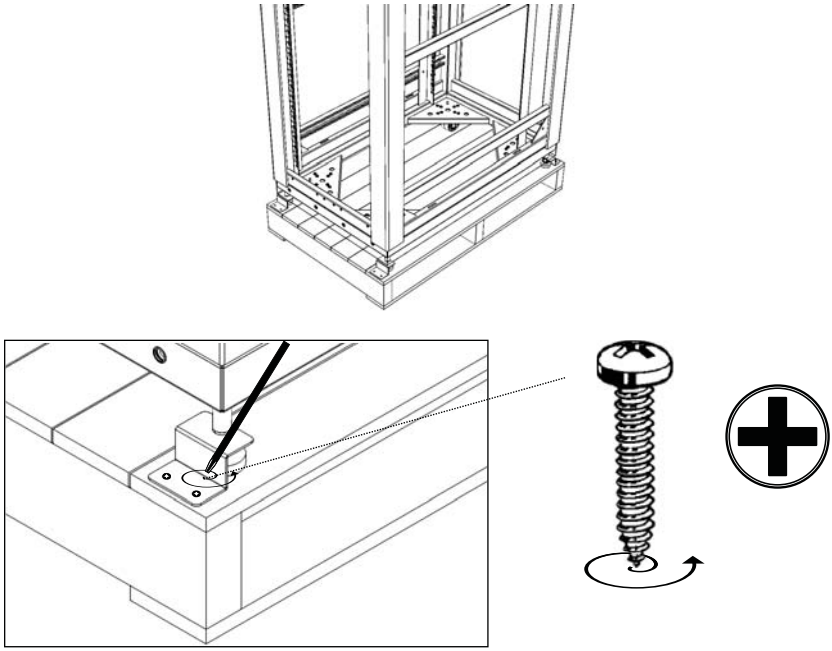
6. Remove all the remaining tape from the shipping carton pieces and the interior plastic covering.

Note: The shipping carton can be reused for reshipping the SuperRack in the future. It is recommended that you retain the carton pieces and the interior plastic covering for any possible future use.

7. Inspect the SuperRack for any damage.

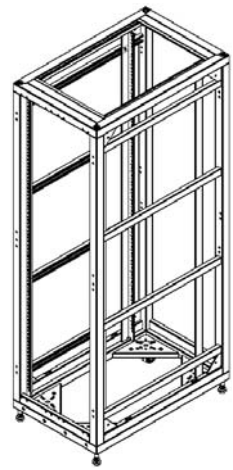
8. Remove the pallet retaining brackets with a screwdriver (see Figure 3-4).

Figure 3-4. Remove Pallet Retaining Brackets



9. Gently take the SuperRack off its pallet and place it in its final location (see Figure 3-5).

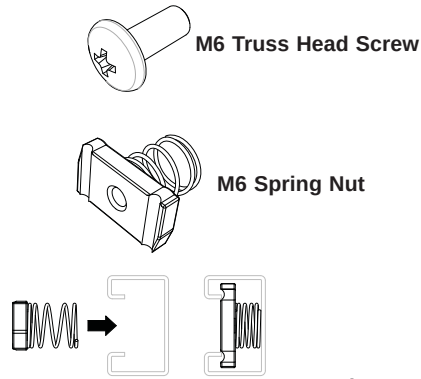
Figure 3-5. Rack Unpacked



3-5 Installing EIA Mounting Posts

EIA mounting posts are used for securing slide rails, drawers, shelves and other rack components. Since on occasion you may have to remove or modify the location of these posts, the below procedures for installing EIA mounting posts are included here.

Figure 3-6. M6 Spring Nuts and Truss Head Screws



Each EIA mounting post uses four securing M6 truss head screws to attach them to the rack's horizontal struts using M6 spring nuts (see Figure 3-6).

The EIA mounting posts should be placed so that they are arranged with the unit numbers facing out the front or rear of the SuperRack with the number "42" on top and the "1" on the bottom (see Figure 3-7). SuperRack EIA mounting posts accept square spring nuts for securing rack components with panel screws.

There are different models of 42U round/square hole EIA mounting posts for each different position in the rack. See the table below for each position's model number.

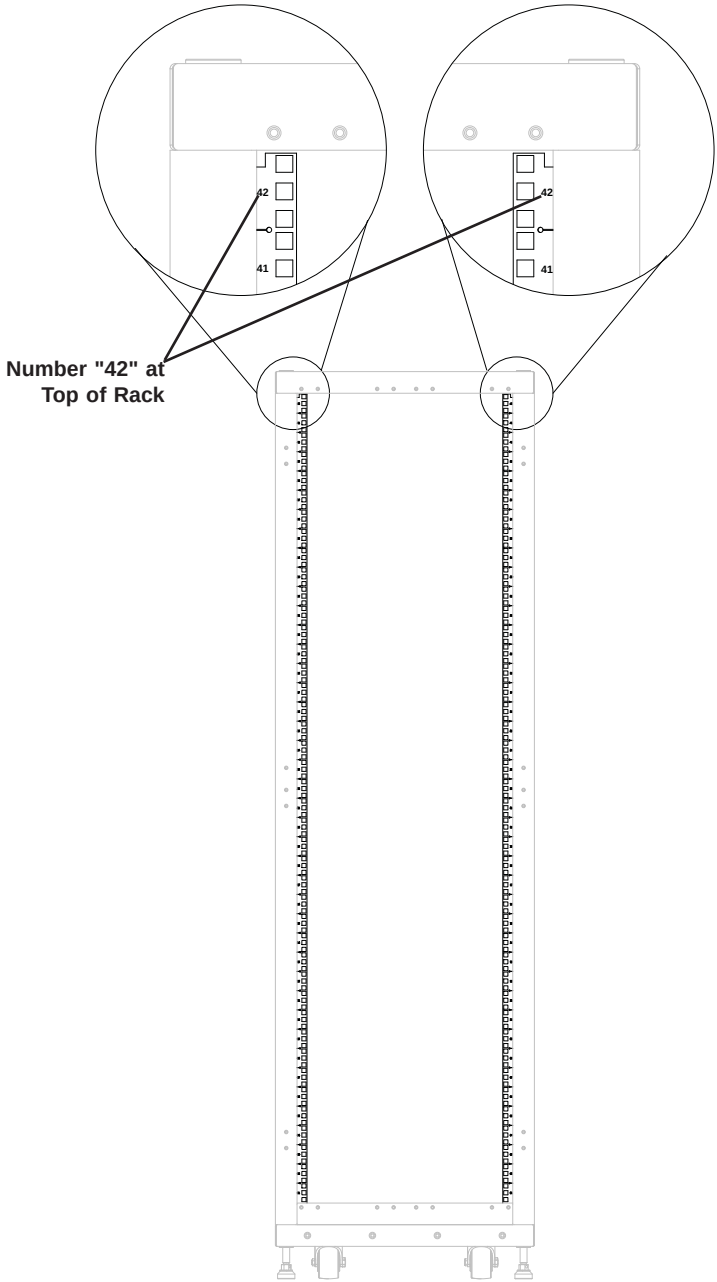
EIA Mounting Post Model Numbers	
Position	**Model Number**
Front-left post	SRK-42PM-01
Front-right post	SRK-42PM-02
Rear-right post	SRK-42PM-11
Rear-left post	SRK-42PM-12

Notes:

1) You must choose the same kind of EIA mounting posts for the rack, either round or square holes, for all posts.

2) It is recommended that you use a size H3 screw head in order to prevent damage to the M6 Truss Head screws when using a power screwdriver.

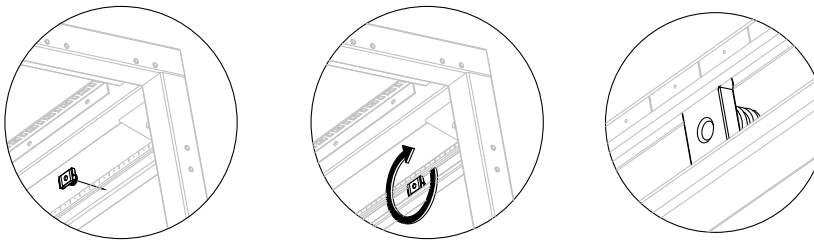
Figure 3-7. EIA Post Numbering



Installing EIA Posts into a Super Rack

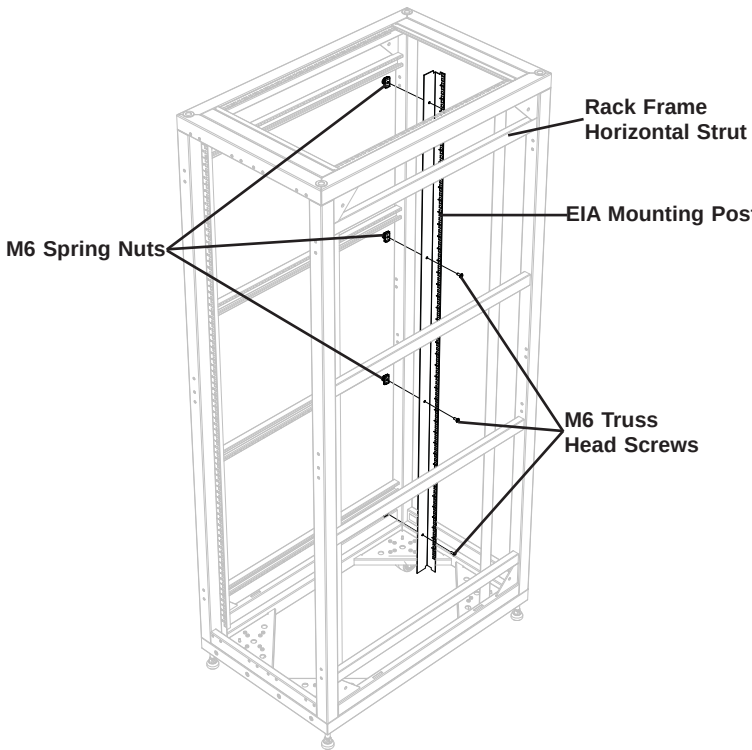
1. Push each M6 spring nut into the back of the horizontal strut's C-channel and rotate each nut 90-degrees (see Figure 3-8).

Figure 3-8. Installing M6 Spring Nuts



2. Use the provided M6 Truss Head screws to lock the EIA mounting posts into position into each of the M6 spring nuts on the horiznontal struts, but do not fully tighten them yet (see Figure 3-9).

Figure 3-9. Installing EIA Posts



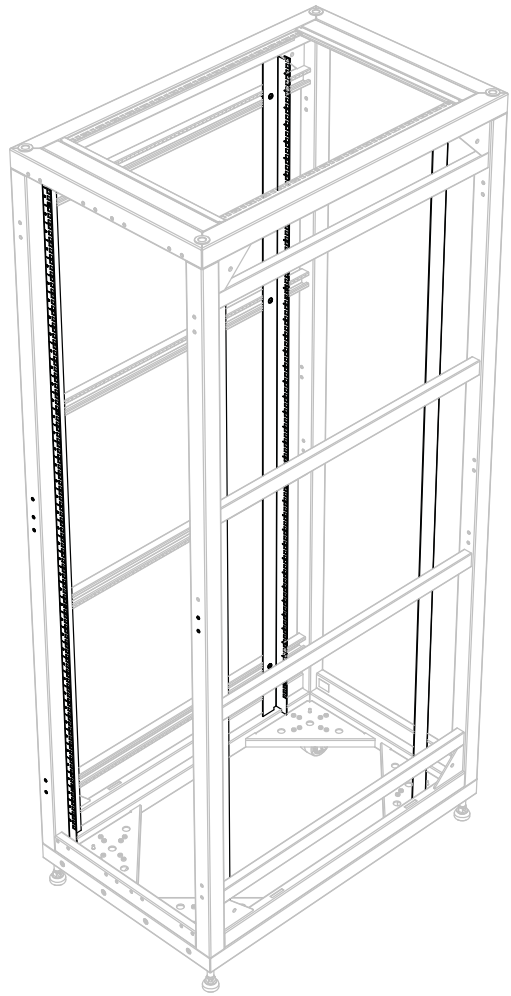
3. Move the EIA posts that face the front of the rack all the way forward till they touch the outer frame front.

4. Adjust the distance between the front and back posts to approximately 742mm distance.

Note: The distance on top must match the measurement on the bottom.

5. Tighten the screws on the rear of each of the EIA mounting posts fully to secure them to each of the rack frame's horizontal struts (see Figure 3-10).

Figure 3-10. Rack with Installed EIA Posts



Chapter 4

SuperRack Models

4-1 SuperRack Model SRK-42BF-01

The SuperRack Model SRK-42BF-01 is a 42U basic frame rack with no casters, enclosure, rear expansion or front door.

SuperRack Model SRK-42BF-01 Specifications:

Net Weight	52.26 kg / 117.41 lbs
Maximum Height	2020.00 mm / 79.52 in
Maximum Width	598.00 mm / 23.54 in
Maximum Depth	950.00 mm / 37.40 in
Net Depth with Stabilizing Feet	950.00 mm / 37.40 in
Shipping Weight	80.72 kg / 177.95 lbs
Shipping Height	2170.00 mm / 85.43 in
Shipping Width	640.00 mm / 25.19 in
Shipping Depth	1030.00 mm / 40.55 in
Weight Capacity (Static Load)	2500.00 kg / 5511.55 lbs
Weight Capcity (Dynamic Load)	1250.00 kg / 2755.77 lbs
Minimum Mounting Depth	100.00 mm / 3.93 in
Maximum Mounting Depth	850.00 mm / 33.46 in
Rack Height	42 U
Color	Black
Units per Pallet	1
Vertical Posts	16 Gauge
Front Door	NA
Rear Door	NA
Roof	NA
EIA Mounting Rails	14 Gauge
Side Panels	NA

Conformance:

Regulatory Approvals	EIA-310-D
Standard Warranty	3 Years
Standards	UL 60950
Environmental Compliance	RoHS

4-2 SuperRack Model SRK-42OR-01

The SuperRack Model SRK-42OR-01 is a 42U open frame rack with casters and stands. This model does not come with an enclosure, rear expansion or front door.

SuperRack Model SRK-42OR-01 Specifications:

Net Weight	55.42 kg / 122.18 lbs
Maximum Height	2092.70 mm / 82.38 in
Maximum Width	598.00 mm / 23.54 in
Maximum Depth	950.00 mm / 37.40 in
Net Depth with Stabilizing Feet	950.00 mm / 37.40 in
Shipping Weight	83.23 kg / 183.74 lbs
Shipping Height	2230.00 mm / 87.79 in
Shipping Width	640.00 mm / 25.19 in
Shipping Depth	1030.00 mm / 40.55 in
Weight Capacity (Static Load)	2500.00 kg / 5511.55 lbs
Weight Capcity (Dynamic Load)	1250.00 kg / 2755.77 lbs
Minimum Mounting Depth	100.00 mm / 3.93 in
Maximum Mounting Depth	850.00 mm / 33.46 in
Rack Height	42 U
Color	Black
Units per Pallet	1
Vertical Posts	16 Gauge
Front Door	NA
Rear Door	NA
Roof	NA
EIA Mounting Rails	14 Gauge
Side Panels	NA

Conformance:

Regulatory Approvals	EIA-310-D
Standard Warranty	3 Years
Standards	UL 60950
Environmental Compliance	RoHS

4-3 SuperRack Model SRK-42OR-02

The SuperRack Model SRK-42OR-02 is a 42U open frame rack with casters and stands and a rear expansion for power strips and cable runs. This model does not come with an enclosure or front door.

SuperRack Model SRK-42OR-02 Specifications:

Net Weight	78.82 kg / 173.76 lbs
Maximum Height	2092.70 mm / 82.38 in
Maximum Width	598.00 mm / 23.54 in
Maximum Depth	1175.00 mm / 46.25 in
Net Depth with Stabilizing Feet	1175.00 mm / 46.25 in
Shipping Weight	111.56 kg / 245.94 lbs
Shipping Height	2230.00 mm / 87.79 in
Shipping Width	640.00 mm / 25.19 in
Shipping Depth	1260.00 mm / 49.60 in
Weight Capacity (Static Load)	2500.00 kg / 5511.55 lbs
Weight Capcity (Dynamic Load)	1250.00 kg / 2755.77 lbs
Minimum Mounting Depth	100.00 mm / 3.93 in
Maximum Mounting Depth	850.00 mm / 33.46 in
Rack Height	42 U
Color	Black
Units per Pallet	1
Vertical Posts	16 Gauge
Front Door	NA
Rear Door	NA
Roof	NA
EIA Mounting Rails	14 Gauge
Side Panels	NA

Conformance:

Regulatory Approvals	EIA-310-D
Standard Warranty	3 Years
Standards	UL 60950
Environmental Compliance	RoHS

4-4 SuperRack Model SRK-42SE-01

The SuperRack Model SRK-42SE-01 is a 42U enclosed rack with casters, stands and an enclosure with both front and rear door. Both the enclosure side panels and the front door have locks for security.

SuperRack Model Model SRK-42SE-01 Specifications:

Net Weight	94.04 kg / 207.60 lbs
Maximum Height	2092.70 mm / 82.38 in
Maximum Width	598.00 mm / 23.54 in
Maximum Depth	1000.00 mm / 39.37 in
Net Depth with Stabilizing Feet	1000.00 mm / 39.37 in
Shipping Weight	121.85 kg / 268.63 lbs
Shipping Height	2230.00 mm / 87.79 in
Shipping Width	640.00 mm / 25.19 in
Shipping Depth	1030.00 mm / 40.55 in
Weight Capacity (Static Load)	2500.00 kg / 5511.55 lbs
Weight Capcity (Dynamic Load)	1250.00 kg / 2755.77 lbs
Minimum Mounting Depth	100.00 mm / 3.93 in
Maximum Mounting Depth	850.00 mm / 33.46 in
Rack Height	42 U
Color	Black
Units per Pallet	1
Vertical Posts	16 Gauge
Front Door	18 Gauge
Rear Door	18 Gauge
Roof	NA
EIA Mounting Rails	14 Gauge
Side Panels	18 Gauge

Conformance:

Regulatory Approvals	EIA-310-D
Standard Warranty	3 Years
Standards	UL 60950
Environmental Compliance	RoHS

4-5 SuperRack Model SRK-42SE-02

The SuperRack Model SRK-42SE-02 is a 42U enclosed rack with casters, stands, a rear expansion for power strips and cable runs, and an enclosure with a both a front and rear door. Both the enclosure side panels and the front door have locks for security.

SuperRack Model Model SRK-42SE-02 Specifications:

Net Weight	117.44 kg / 258.91 lbs
Maximum Height	2092.70 mm / 82.38 in
Maximum Width	598.00 mm / 23.54 in
Maximum Depth	1225.00 mm / 48.22 in
Net Depth with Stabilizing Feet	1225.00 mm / 48.22 in
Shipping Weight	150.18 kg / 331.08 lbs
Shipping Height	2230.00 mm / 87.79 in
Shipping Width	640.00 mm / 25.19 in
Shipping Depth	1260.00 mm / 49.60 in
Weight Capacity (Static Load)	2500.00 kg / 5511.55 lbs
Weight Capcity (Dynamic Load)	1250.00 kg / 2755.77 lbs
Minimum Mounting Depth	100.00 mm / 3.93 in
Maximum Mounting Depth	850.00 mm / 33.46 in
Rack Height	42 U
Color	Black
Units per Pallet	1
Vertical Posts	16 Gauge
Front Door	18 Gauge
Rear Door	18 Gauge
Roof	NA
EIA Mounting Rails	14 Gauge
Side Panels	18 Gauge

Conformance:

Regulatory Approvals	EIA-310-D
Standard Warranty	3 Years
Standards	UL 60950
Environmental Compliance	RoHS

Chapter 5

Optional Accessories

This chapter covers information about various optional accessories that may be included in your SuperRack system. See your enclosed parts list for a complete list of parts supplied for your SuperRack system.

For the most recent list of parts and accessories available for the SuperRack system, visit the Supermicro website at www.Supermicro.com for more details.

Some of the optional accessories available for your SuperRack system include the following:

- Fan modules for vented doors and top panel over fans
- Doors for the front or rear
- Top and side panels
- Cable management troughs and Goose Neck pipes for fiber optic cables
- Expansion units for front, rear or sides
- Shelves

For a full list of SuperRack components, accessories and parts see Appendix A for details.

5-1 Tools

For modifying accessories on the SuperRack, you will need to use the following required tools:

- Phillips Screwdriver
- Level
- Box Cutter or shears
- Tape Measure
- Step Ladder
- Set of Allen Wrenches

The following tools are optional, but recommended:

- Flashlight
- Gloves

Screw Bag

The SuperRack comes complete with an attached screw bag for storing small attachments and screws so that they are available for future use and do not get misplaced or lost (Figure 5-1).

Figure 5-1: SuperRack Screw Bag

5-2 Accessories and Modification Procedures

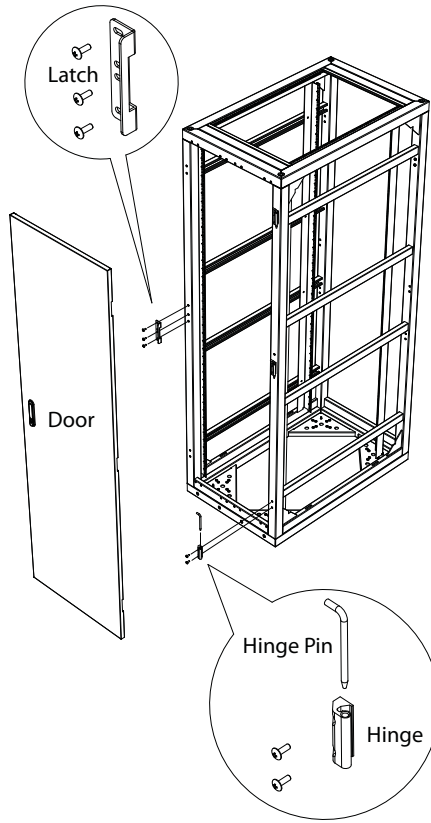
The following section contains descriptions of common accessories for the SuperRack system and common procedures for modifying your SuperRack to customize it for your use.

Doors

Several models of doors (solid, ventilated, mesh and filter) are available for mounting in the SuperRack system either as front or rear doors. Ventilated mesh doors and filter doors that provide for increased air flow can have fan modules installed on them. The doors come with locking handles for added security. See Figure 5-1 for an illustration of the parts used for mounting doors.

The procedures for uninstalling and installing the doors are shown below.

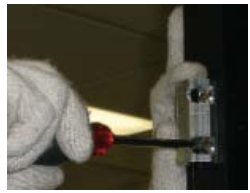
Figure 5-1: Door Mounting



Installing Doors

1. If your rack does not already have them installed, screw the door latches to either the top and bottom of the SuperRack frame (for double doors), or to the mid-left side of the frame (for single doors).

2. If your rack does not already have them installed, screw door hinges onto your rack sides. For single doors attach three on the right side. For double doors attach three hinges to both sides.



3. Lift and place the door onto the hinges. For two doors setups, lift and attach to the hinges only one door at a time.

4. While holding the door in place, aligned with its hinges, insert the hinge pins to secure the door in place. It is recommended that you place the first pin in the middle hinge and then place the pins for the top and bottom hinges afterwards.

Note: It is recommended that you have assistance to hold the door in place while inserting the hinge pins.

5. Close the SuperRack doors to verify that they latch and move on their hinges properly.

Uninstalling Doors

1. Open door(s) wide for access. Unattach any fan modules or other attachments from the door before uninstalling it.

2. Pull out the hinge pins holding the door in place one at a time while stabilizing the door with your other hand.

3. Lift the door off its hinges and place it in a safe location till either packing it away or reinstalling it onto the SuperRack.

4. (Optional) Unscrew and remove hinges and place them in a secure place with their securing screws if they are no longer needed.

5. (Optional) Remove door latches from the top and bottom of the SuperRack if no longer needed.

Top and Side Panels

Both top and side panels are available for installation in the SuperRack system. Some panel models come ventilated for increased airflow, and some come with locks for security. Side panels are secured by braces and securing tabs, while top panels are secured by straight-head plastic expanding screw-mounts.

Installing and Uninstalling Side Panels

The procedures for installing and uninstalling SuperRack side panels (two per side) are shown below.

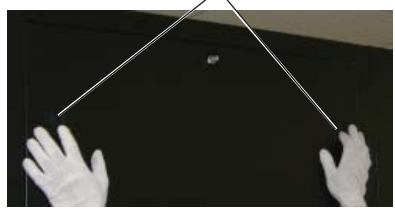
Installing Side Panels

1. Attach panel braces to the SuperRack frame, four for each side panel.

2. Attach the side panel to the panel braces to hold it in place.

Securing Tabs

3. Pull in the securing tabs on the panel and gently push the panel into place on the frame, then when the panel is securely in place, release the securing tabs.



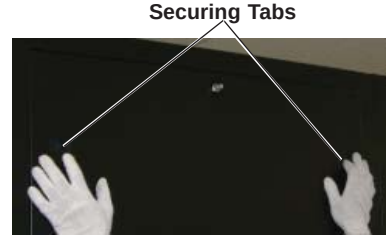
4. Turn the locking latch lever on the inside of the panel vertically to lock it into place, securing the panel with the frame, and then screw its securing screw tight.

Uninstalling Side Panels

1. Loosen and turn the locking latch lever on the inside of the panel to a horizontal position.

Securing Tabs

2. On the outside of the panel pull out the securing tabs.



3. Pull off the panel and place it carefully in a secure location.

4. Remove the panel braces and place them in a secure location.

Note: Side blanking panels are also available for mounting on the front or rear of the rack using cage nuts and panel screws.

Installing and Uninstalling Top Panels

The procedures for installing and uninstalling SuperRack top panels are shown below.

Installing Top Panels

1. Place the top panel gently into the space on the rack's top.

2. Verify that the panel is securely placed on the top of the rack.

3. Turn the expanding screw mounts so that the screw heads are parallel with the outside edges of the panel.

Uninstalling Top Panels

1. Loosen the expanding screw mounts so that the screw heads are perpendicular to the outside edges of the panel.

2. Gently remove the panel from the top of the rack.

Types of Top Panels

Top panels come in the following four categories.

Blanking Panels

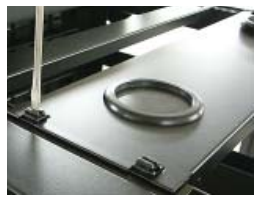
Blanking panels are used to cover a space in the top of the rack. They come in sizes from 1U to 16U and come in both solid and mesh panels.

Top Panel Fans

Top panel fans are different optional fan panels that are built into top panels and come in sizes from 3U to 14U in size. These fan panels should have cable troughs to cover their power wiring.

Top Panel Openings

The top panel openings are different optional top panels that contain two openings, sealed by a rubber grommet, that can each be used for a Goose Neck pipe or allow openings from the top down into the rack for wiring or other uses.



Goose Neck Pipe

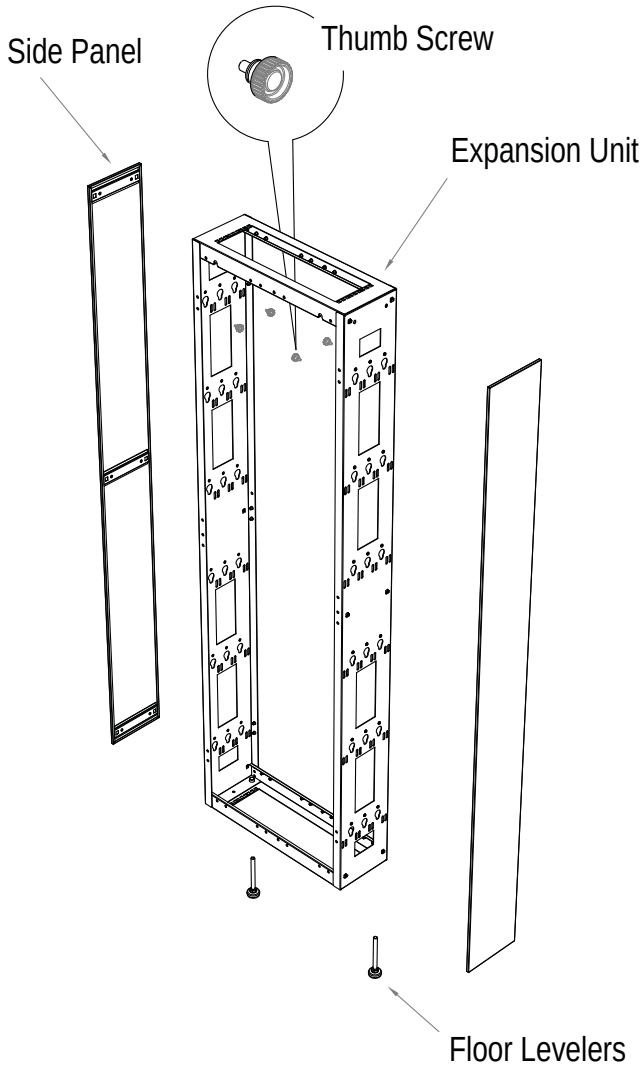
Top Cable Management Troughs

Three sizes of top cable management troughs are available from 1U to 3U to cover and handle wiring on the top of the rack.

Expansion Units

There are several models of expansion units, ranging in width from 75mm to 300mm, available for the SuperRack system that can be mounted on the front, sides or rear of the rack for holding doors, cable troughs, power surge protectors panels and fans. Two of the base SuperRack models come standard with rear expansion units. See Figure 5-2 for an example of an expansion unit and its parts.

Figure 5-2: Expansion Unit and its Parts



Installing an Extension Unit onto a Rack

1. Extend the rack extension's floor levers and carefully mount the extension unit flush to the rack.

   Note: You may have to adjust the floor levelers so that the retaining screw holes in the rack extension match up with the screw holes in the rack itself.

2. Place and hand tighten the retaining screws on the inside of the extension unit's sides, bottom and top to secure the extension unit to the rack.

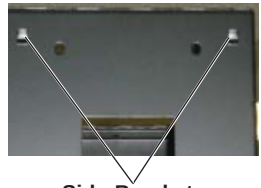
3. Tighten the retaining screws after determining that the extension is aligned correctly with the rack.

Uninstalling a Rack Extension from a Rack

To uninstall a rack extension, follow the previous procedure for installing a rack extension in reverse by first unscrewing the securing screws, and then unmounting the rack extension from the rack.

Installing Rack Extension Side Panels

1. Mount the side panel to the side of the rack extension on the rack extension's side brackets.



Side Brackets

2. Screw in the retaining screws to secure the rack extension side panel in place.

Uninstalling Rack Extension Side Panels

To uninstall a rack extension side panel, follow the previous procedure in reverse by first unscrewing its retaining screws, and then unmounting the side panel from the rack extension's side brackets.

EIA Posts

EIA posts are mounting posts for securing slide rails, drawers, shelves and other rack components. Since on occasion you may have to remove or modify the location of these posts, the below procedures for installing and uninstalling EIA posts are included here.

Each EIA post has four securing screws that attach to spring mounted screw holes on the rack's horizontal struts. The posts should be placed so that they are arranged with the unit numbers facing out the front or rear of the SuperRack with the number "42" on top and the "1" on the bottom. SuperRack EIA posts accept square cage nuts for securing rack components with panel screws.

Installing an EIA Post into a Rack

1. Put the right front post on right side of frame. The post should be flush to the frame front.

Note: The numbers should be on the inside of the post when you place the correct post on the correct side. Make sure the proper post is on the proper side and that both the right and left post numbers match.

2. Match the adjustable spring screw holes on the rack's horizontal struts so that the screw holes match up with the holes in the EIA post.

3. Screw in the four retaining screws through the EIA post and into the adjustable spring screw holes on the horizontal struts. Start with the center two screws and then the top and bottom screws.

4. Repeat steps 1 through 3 for the left front post.

5. Adjust the adjustable spring screw holes for the rear posts so that they all match up with the same rules on the rack's horizontal struts.

6. Place the right rear post into position in the rack so that it lines up with the adjustable spring screw holes.

7. Screw in the three retaining screws for the right rear post to secure it, starting with the center two screws and then the top and bottom screws.

8. Repeat steps 5 through 7 for the left front post.

Uninstalling an EIA Post from a Rack

1. Remove the screws from the EIA post.

2. Pull the EIA post off the rack frame.

Changing Casters

The SuperRack is mounted on four 3" swivel casters for moving the rack when required. When not being moved, the SuperRack system should be mounted on floor levelers instead for stability. If you need to change out a caster, use the procedure shown below.

Changing Casters

1. Tip the rack over on its side onto a platform so it does not touch the floor.

2. Adjust the floor levelers up so they are out of the way of the swivel casters.

3. With an Allen wrench, detach the screws that secure the first caster in place.

4. Remove the caster and inspect the caster mounting plate for defects.

5. Put the new caster in place and screw in the securing screws around the new caster with the Allen wrench.

Note: There are two sets of screw holes used for mounting casters. The inner set is for smaller 2.5" casters, while the outer set is for 3" casters. User this outer set for SuperRack 3" casters.

Note: Double-check that all screws have lock washers on them and that they are securely tightened before placing the SuperRack upright.

6. Redeploy the leveling stands so that they are all back at the same level.
7. Push the SuperRack back upright.

Shelves and Slide Rails

Various types of shelves for rack components are available for the SuperRack system. They come in sizes from 1U-3U in height and are available as vented or non-vented shelves. All shelves can be mounted with four cage nuts and four panel screws onto the front EIA posts of the SuperRack.

The SuperRack also has 1U and 2U brackets with cable management troughs that can mounted to EIA rails for supporting rack components. Use the procedures below for installing and uninstalling this bracket system.

Installing Brackets with a Cable Management Trough

1. Open the bracket package and lay out parts for inspection. Make sure you have all parts and that they are undamaged.

2. Screw the brackets together through the second from left screw hole with a panel screw, so that the bracket's flanges are on the outside.

3. On the SuperRack EIA posts (front and rear), attach cage nuts with the nuts facing the inside of the rack. Mount all cage nuts above and below the same EIA post number.

4. Mount and screw the front of the brackets onto the cage nuts mounted on the front EIA post (from Step 3) with two panel screws for each post.

Make sure the front of each bracket is tightly screwed onto its EIA post.

5. Mount the cable management trough on the outside of the rear EIA posts and screw it and the rear brackets together with a panel screw through the rear cage nuts. Do this one screw at a time until all four rear screws are tightly securing both the cable management trough and the rear of the brackets together.

6. Slide on the cable management trough cover. The bracket and cable trough are ready for mounting a rack component.

Uninstalling Brackets with a Cable Management Trough

To uninstall a brackets with a cable management trough, follow the previous procedure in reverse. First unscrew the panel screws in the rear EIA posts, unmount the cable trough, and then unscrew the brackets from the front EIA post and remove the brackets.

The SuperRack system also uses standard slide rails that can be attached to rack components for mounting on the rack EIA posts. Figure 5-3 below shows various sizes of slide rails that can be mounted on the EIA posts in the SuperRack.

Figure 5-3: Sliding Rails

Component Installation

Various network and server components can be mounted in your SuperRack system. They may be mounted on shelves if under 3U in height, or directly on the rack's EIA posts using sliding rails or brackets. See the user's manual for your rack components for instructions on mounting rails onto their chassis.

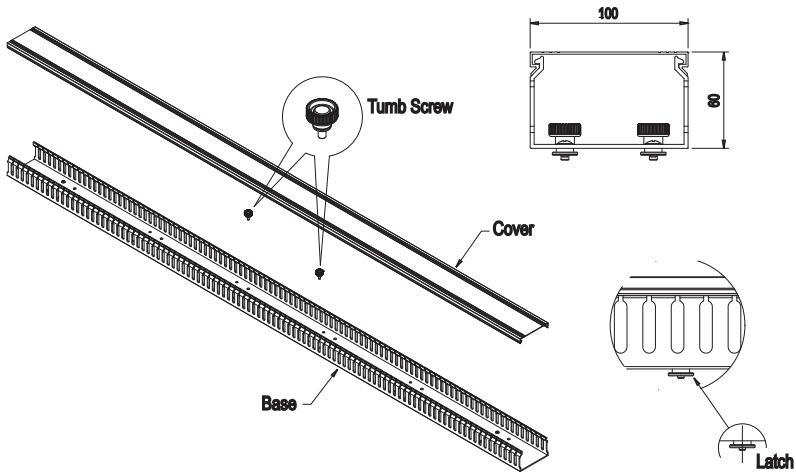
Fan Modules

The SuperRack system comes with several different fan modules for mounting in both the roof as top panels and on specially ventilated doors. The door modules are between 3U and 14U in size and require only four screws each to install on special doors. See the "Top and Side Panels" section for details on top panel over fans.

Cable Management Troughs and Fiber Optic Pipes

Different types of cable management troughs and fiber optic pipes are available for mounting on the rear or sides of the SuperRack sytem (Figure 5-4). This allows you to easily manage the cables of your SuperRack's contents.

Figure 5-4: Cable Management Trough



These cable mangement troughs come in 1U or 2U models for mounting on EIA posts and in 54mm or 108mm width by 40mm, 60mm or 80mm length fingers or cover-over models for mounting on side mounted vertical mounting plates (that are either 70mm or 130mm wide).

The cable management troughs that mount on EIA posts are secured with cage nuts and panel screws for mounting on the back EIA posts of the rack. Cable troughs for side mounting are attached to vertical mounting plates or on rack extensions, and are mounted by using pegs or slots on the cable trough (see Figure 5-5).

Figure 5-5: Cable Management Trough Pegs and Slots

Mounting a Vertical Plate

In order to mount a cable management trough, you may first need to mount a vertical plate onto the SuperRack's frame. Cable management troughs mounted on rack extensions do not need to use a vertical plate since slot and peg holes are provided on the rack extension already for them. Follow the procedure below for mounting and unmounting a vertical plate onto the rack frame.

Mounting a Vertical Plate onto the Rack

1. Dismount any side panels that are on the rear of the SuperRack.

2. Insert spring screw holes on all horizontal struts in the rack's rear side where you wish to mount the vertical plate.
3. Mount the verical plate so that its screw holes match the spring screw holes on the horizontal struts.

4. Screw in the securing screws to secure the vertical plate to the rack.

Unmounting a Vertical Plate from the Rack

To unmount a vertical plate from the rack, follow the previous procedure in reverse by first unscrewing its retaining screws, and then unmounting the vertical plate from the rack.

Mounting a Cable Management Trough to a Vertical Plate

To mount a cable management trough to a vertical plate, use the procedure below.

Mounting a Cable Management Trough to a Vertical Plate

1. Insert the vertical plate's slots or pegs so that they slide into the matching slot or peg support holes on the vertical plate.
2. Screw in the two retaining thumb screws through the cable management trough into the matching holes in the vertical plate.

Note: The 70mm vertical plate can only mount cable management troughs using pegs, whereas the 130mm vertical plate and rear extensions can mount cable managment troughs using both pegs and mounting slots.

Note: You can also mount cable management troughs without a vertical plate on a bare SuperRack frame by their pegs or slots and by using spring screw holes to secure them. This method is not as secure as mounting them to a vertical plate though.

Unmounting a Cable Management Trough from a Vertical Plate

To unmount a cable management trough from a vertical plate on the rack, follow the previous procedure in reverse by first unscrewing its retaining thumb screws, and then unmounting the cable management trough from the vertical plate.

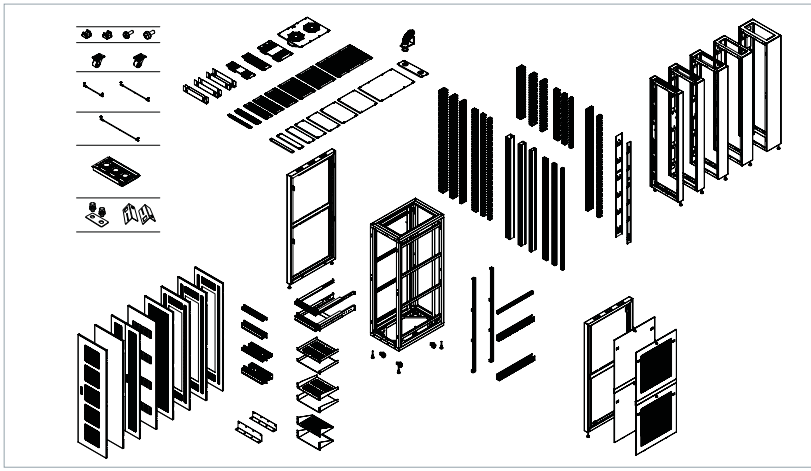
Notes

Appendix A

SuperRack System Parts List

Below is list of parts and accessories for the SuperRack system as shown in Figure A-1. This list is not all inclusive, please see the SuperMicro website or contact Supermicro for information on the the lastest parts and accessories for the SuperRack system.

Figure A-1: SuperRack System Parts



Part Number	Descriptions
SRK-42BF-00 42U	Open Basic Frame, 598 x 2020 x 950 mm (WxHxD)
SRK-42BF-01 42U	Open Basic Frame, 598 x 2020 x 950 mm (WxHxD)
SRK-42OR-01 42U	Open Frame Rack, 598 x 2080 x 950 mm (WxHxD)
SRK-42OR-02 42U	Open Frame Rack, 598 x 2080 x 1175 mm (WxHxD)
SRK-42SE-01 42U	Enclosure, 598 x 2080 x 1000 mm (WxHxD)
SRK-42SE-02 42U	Enclosure, 598 x 2080 x 1225 mm (WxHxD)
SRK-00AS-01	Floor Levelers
SRK-00AS-11	M5 Cage Nut
SRK-00AS-12	M6 Cage Nut
SRK-00AS-21	M5 Panel Screw
SRK-00AS-22	M6 Panel Screw
SRK-00AS-31	200 mm Low-resistance Conductive Kit
SRK-00AS-32	400 mm Low-resistance Conductive Kit
SRK-00AS-33	300 mm Low-resistance Conductive Kit

Part Number	Descriptions
SRK-00AS-41	2.5 inch (63.50 mm) Bolt Down kit
SRK-00AS-42	3.0 inch (76.20 mm) Bolt Down kit
SRK-00AS-51	(optical fiber) Goose Neck Pipe
SRK-03AS-61	Fan Module for Vented Door
SRK-00AS-71	Join Bracket Kits
SRK-00AS-81	APC 0U PDU Adapter Kit
SRK-01CM-01	1U Top Cable Management Trough
SRK-02CM-01	2U Top Cable Management Trough
SRK-03CM-01	3U Top Cable Management Trough
SRK-01CM-11	1U Sided Mounting Cable Management Trough - 30mm (D)
SRK-02CM-11	2U Sided Mounting Cable Management Trough - 50mm (D)
SRK-02CM-12	2U Sided Mounting Cable Management Trough - 60 mm(D)
SRK-01CM-21	1U Single Sided Fingers Cable Management Trough
SRK-02CM-21	2U Single Sided Fingers Cable Management Trough
SRK-01CM-31	1U Double Sided Fingers Cable Management Trough
SRK-02CM-31	2U Double Sided Fingers Cable Management Trough
SRK-01CM-41	1U Bracket with Fingers Cable Management Trough
SRK-02CM-41	2U Bracket with Fingers Cable Management Trough
SRK-20CM-51	20U Vertical Mounting with Fingers Cable Management Trough - 54 x 40 mm (W x D)
SRK-20CM-52	20U Vertical Mounting with Fingers Cable Management Trough - 54 x 60 mm (W x D)
SRK-20CM-53	20U Vertical Mounting with Fingers Cable Management Trough - 54 x 80 mm (W x D)
SRK-20CM-54	20U Vertical Mounting with Fingers Cable Management Trough - 108 x 40 mm (W x D)
SRK-20CM-55	20U Vertical Mounting with Fingers Cable Management Trough - 108 x 60 mm (W x D)
SRK-20CM-56	20U Vertical Mounting with Fingers Cable Management Trough - 108 x 80 mm (W x D)
SRK-42CM-61	42U Vertical Mounting with Fingers Cable Management Trough - 54 x 40 mm (W x D)
SRK-42CM-62	42U Vertical Mounting with Fingers Cable Management Trough - 54 x 60 mm (W x D)
SRK-42CM-63	42U Vertical Mounting with Fingers Cable Management Trough - 54 x 80 mm (W x D)
SRK-42CM-64	42U Vertical Mounting with Fingers Cable Management Trough - 108 x 40 mm (W x D)
SRK-42CM-65	42U Vertical Mounting with Fingers Cable Management Trough - 108 x 60 mm (W x D)
SRK-42CM-66	42U Vertical Mounting with Fingers Cable Management Trough - 108 x 80 mm (W x D)
SRK-42CM-71	42U Vertical Mounting with Cover Over Fingers Cable Management Trough - 54 x 40 mm (W x D)
SRK-42CM-72	42U Vertical Mounting with Cover Over Fingers Cable Management Trough - 54 x 60 mm (W x D)

Part Number	Descriptions
SRK-42CM-73	42U Vertical Mounting with Cover Over Fingers Cable Management Trough - 54 x 80 mm (W x D)
SRK-42CM-74	42U Vertical Mounting with Cover Over Fingers Cable Management Trough - 108 x 40 mm (W x D)
SRK-42CM-75	42U Vertical Mounting with Cover Over Fingers Cable Management Trough - 108 x 60 mm (W x D)
SRK-42CM-76	42U Vertical Mounting with Cover Over Fingers Cable Management Trough - 108 x 80 mm (W x D)
SRK-42CM-81	42U Vertical Mounting Post with Finger Cable Management Trough - 70 mm (D)
SRK-42CM-82	42U Vertical Mounting Post with Finger Cable Management Trough - 130 mm (D)
SRK-00CT-03	3.0 inch Heavy-duty Swivel Casters (454 kg / 1000 lbs per Caster)
SRK-42DR-01	42U Filter Door
SRK-42DR-02	42U Solid Door
SRK-42DR-03	42U Split Meshed Door
SRK-42DR-04	42U Vented Door
SRK-42DR-05	42U Meshed Door
SRK-42DR-06	42U Meshed inlaid with Tempered Glass Door
SRK-42DR-07	42U Meshed inlaid with Diaphanous Acrylic Door
SRK-42DR-08	42U Meshed inlaid with Brown Acrylic Door
SRK-42EU-01	42U Expansion Unit - 100 mm
SRK-42EU-02	42U Expansion Unit - 150 mm
SRK-42EU-03	42U Expansion Unit - 200 mm
SRK-42EU-04	42U Expansion Unit - 225 mm
SRK-42EU-05	42U Expansion Unit - 300 mm
SRK-42EU-06	42U Sided Expansion Unit - 75 mm
SRK-42MP-01	42U Round Hole Mounting Post - Front Left and Rear Right
SRK-42MP-02	42U Round Hole Mounting Post - Front Right and Rear Left
SRK-42MP-11	42U Square Hole Mounting Post - Front Left and Rear Right
SRK-42MP-12	42U Square Hole Mounting Post - Front Right and Rear Left
SRK-42MP-31	42U Vertical Mounting Plate - 70 mm (W)
SRK-42MP-32	42U Vertical Mounting Plate - 130 mm (W)
SRK-42MP-41	42U Sided Vertical Mounting Post
SRK-01PN-01	1U Mesh Blanking Panel
SRK-02PN-01	2U Mesh Blanking Panel
SRK-03PN-01	3U Mesh Blanking Panel
SRK-04PN-01	4U Mesh Blanking Panel
SRK-05PN-01	5U Mesh Blanking Panel
SRK-07PN-01	7U Mesh Blanking Panel
SRK-08PN-01	8U Mesh Blanking Panel
SRK-16PN-01	16U Mesh Blanking Panel
SRK-01PN-11	1U Solid Blanking Panel

Part Number	Descriptions
SRK-02PN-11	2U Solid Blanking Panel
SRK-03PN-11	3U Solid Blanking Panel
SRK-04PN-11	4U Solid Blanking Panel
SRK-05PN-11	5U Solid Blanking Panel
SRK-07PN-11	7U Solid Blanking Panel
SRK-08PN-11	8U Solid Blanking Panel
SRK-16PN-11	16U Solid Blanking Panel
SRK-03PN-21	3U Top Panel Over 2 Fans - AC 120V
SRK-03PN-22	3U Top Panel Over 2 Fans - AC 208V
SRK-03PN-31	3U Top Panel Over 3 Fans - AC 120V
SRK-03PN-32	3U Top Panel Over 3 Fans - AC 208V
SRK-06PN-41	6U Top Panel Over 4 Fans - AC 120V
SRK-06PN-42	6U Top Panel Over 4 Fans - AC 208V
SRK-14PN-51	14U Top Panel Over 2 Fans - AC 120V
SRK-14PN-52	14U Top Panel Over 2 Fans - AC 208V
SRK-20PN-61	42U 2-Sectional Removable Mesh Side Panel
SRK-20PN-62	42U 2-Sectional Removable Solid Side Panel
SRK-03PN-71	3U Top Panel Over 2 Openings
SRK-00PT-01	Reusedable Steel Pallet, 350 kg / 772 lbs
SRK-00PT-02	Reusedable Steel Pallet, 550 kg / 1212 lbs
SRK-00PT-03	Reusedable Steel Pallet, 750 kg / 1653 lbs
SRK-00PT-04	Reusedable Steel Pallet, 1050 kg / 1709 lbs
SRK-00PT-05	Reusedable Steel Pallet, 1250 kg / 2756 lbs
SRK-01SF-01	1U Fixed Vented Shelf
SRK-02SF-01	2U Fixed Vented Shelf
SRK-03SF-01	3U Fixed Vented Shelf
SRK-01SF-11	1U Fixed Solid Shelf
SRK-02SF-11	2U Fixed Solid Shelf
SRK-03SF-11	3U Fixed Solid Shelf